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WAXMANN

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Abstract

This paper reflects the changing notion of the Virtual University (1.) and its realisation (2.). We introduce an approach from the Sociology of Science and Technology (STS) which analyses the construction of the "*student as a user*" as seen through the "*eyes of designers*" (3.). We ask how social relations are built into technological artefacts. In showing how socio-technical developments transcend sometimes contradict and various notions of "the student" (4.) we discuss difficulties and chances of bridging the gap between designers of e-learning-artefacts and its assumed addresses (5.).

1 Semi-virtual Universities: The evolution of a vision

Virtual University-projects (VU) – the attempt to put the traditional university online as a whole – had been the great hope of the higher education systems of almost all modern democracies. Although there are some specific versions of VU in different cultural contexts, the mantra "Virtuality" functioned as a rhetoric catalyst for a huge amount of different, sometimes contradictory and quite elastic aims, such as: quality improvement, student centredness, finding new clients, self responsibility of universities, organisational and personnel development, more practical and current curriculum, less hierarchy between teachers and students, improvement of efficiency, internationalisation, improvement of cooperation between and in universities.

In this flexible or elastic sense the VU was a contradictory undertaking from the beginning: firstly, there was the positive effect that because of the interpretative flexibility around the notion, many different actors could contribute to its aims. Secondly due to the elasticity of aims the virtual university in the making caused several tensions between actors, i.e. between those who were extremely reform-oriented as opposed to conservative or those who were market-oriented as opposed to more humanity-oriented.

A widespread literature has been developed to measure or reflect the e-learning attempts to these aims. It is still commonplace to read that information and communication technologies are radically reconfiguring the landscape of higher education, changing the very 'nature' of the university (cf. Abeles, 1998, Glotz & Seufert, 2002, Uhl, 2003). These expectations have fired the imagination

of academics, policy makers, university managers, and educational specialists alike (cf. Goddard, 1999), the assumption being that universities can move straightforwardly towards this vision.

Compared to the dotcom crash e-learning-research curbed much of its enthusiasm and underwent a reflective turn from technocratic expectations to a greater sensibility for the social shaping of technology and science. Especially research on VU is now more focussed on the flexibility and perseverance of the social structures in traditional and virtual universities (Buchholz 2001, Cornford & Pollock, 2002, Robin & Webster, 2002). Therefore some of the most important experiences after these years of experimenting with the Virtual University can be summarized: "Change is slow and not radical" and "ICT in learning and teaching: widespread but a part of a blend" as a current international study about the ICTs in the university concludes (Collis & van der Wende, 2003) an old wisdom of organisational sociology. What was already known finally became explicit as "strategic differences" between different stakeholders, especially the ministries and the universities (Brake, 2000, Kandzia, 2002). More recently virtual university-projects have been reformulated as semi-virtual, hybrid or blended learning which suggests that the current status of e-learning seems to have evolved from reductive notions (such as just ICT-supported distance-learning).

Although it is not easy to discover general trends there seems to be a shift of preferences of asynchronous tools instead of synchronous, single disciplines or master studies instead of the canon of interdisciplined academics as well as self learning instead of group learning. The dominance of offline technologies in current e-learning-developments such as CDs, Laptops and DVDs suggests that we reached a second wave or post-Internet Virtual-University (Hemmi, Schwarz, Pollock, submitted).

From this point of view e-learning and VU have not been 'false' but transforming promises. During the years one core concern seem to remain constant: the enlargement of *the* (virtual) student's flexibility. However, even this reduced virtual promise has implications for our understanding of semi-virtual students and the types of access they will require which we discuss below.

2 The Virtual University is the University made concrete

Recent research suggests that universities have found the introduction of new technologies, alongside their more traditional methods of providing teaching and learning, extremely difficult, and that the actual model of the Virtual University which is emerging, bears little relationship to the vision above (cf. Brake, 2000, Cornford & Pollock, 2000, 2003, Robin & Webster, 2002, Schulmeister, 2001, Woolgar, 2002, Kandzia, 2002, Uhl, 2003, Collis & van der Wende, 2003, Wilson, 2003, Williams et al., 2000, Williams, 2002). Common among many of the problems of implementing such technologies are difficulties in enrolling (or keeping enrolled) all of those aspects of the university necessary to make such

projects work (academic staff, students, computer services departments, libraries, validation committees, partner institutions, etc.). In short, initiatives are confounded by difficulties in co-ordinating a wide range of actors across a large organisation made up of diverse and disparate entities (i.e. departments and service units).

It is, it seems, the very institution of the university which is at the heart of the problem. That means that the virtualization of the university – for what ever purposes – requires different levels of organisational change, the re-shaping of the university, the roles and relationships within as well as institutional structures, in short the re-configuring of the organisation of universities (Cornford & Pollock, 2003). This begs the question: if not this vision of the Virtual University then what? If the central problems of building the virtual university seem to relate to the university as an institution, then it is to this issue that we should perhaps redirect our attention: to the social relations within higher education institutions.

Theodore Porter has described the vision embodied within ICTs as "a world of information" and as a "world of standardised objects and neutralised subjects". This he contrasts with "local sites where skill and intimate familiarity with people and things provide the most promising route to success" (Porter, 1994: 221). But to what extent is "this pacified world", and the concrete structures necessary to create it, compatible with the wider processes of higher education? (Cornford & Pollock, 2003: 77). When we say the Virtual University is the university made concrete we mean that the very notion of information which sits at the root of the notion of a Virtual University contains an ambiguous potential: on the one hand the ability to abstract from specific places, times and communities, but on the other hand a powerful incentive to formalise, to standardise thus making social relations and therefore power relations explicit or: concrete (Cornford & Pollock, 2003: 77).

The alleged core concern of the VU, student-centredness, does seem constant, but the underlying notions have changed more discreetly of what is and should be the university – and their "users". What is the dominant construction of the student? This is held to be a difficult question by many commentators as is evidenced by the following quote: "Neither 'the student' nor 'the institution' is homogeneous and the images rest on complex expectations and attitudes. Students have been and are seen as many things" (Silver & Silver, 1997: 163). The authors point out the dominant change of the notion of the student from the student as an apprentice, a ward, a client, a customer or a member of the university and that, importantly, aspects of all of these roles still exist in institutions today.

How does the university construct the student as a user of e-learning? In general, most virtual universities work with a simplified and what might be described as an 'emptied out' notion of the student. Even in the GMW – as in most e-learning communities – the important question about the underlying designer's perception and construction of the student has neither been set nor answered. Instead we should address this imbalance by highlighting the mutual shaping of technology, its users and their organisations or societies by introducing

a theoretical and empirical framework which was developed in the sociology of technology and science (STS) as well as the sociology of scientific knowledge (SSK).

3 The co-production of technologies and users

There are a number of theoretical contributions to the understanding of how social relations are built in technological artefacts and how technologies are taken up by users by STS and SSK and within them especially from Actor Network Theory (cf. Law, 1994) and the Social Shaping of Technology Approach (Sørensen & Williams, 2002, Lieshout et al., 2001).

It is well known that information and communication technologies provide a powerful incentive to standardisation and classification – this includes notions about users. The identity of the student is 'fixed' through designers making assumptions about the student's needs, desires, goals etc. and embodying such ideas within technologies. Useful insights to the construction of the user and the catching of the consumer are provided by several approaches (Akrich, 1992, 1995, Buchholz, 2001, Buchholz & Schwarz, 2002, Mort, 2003, Woolgar, 1991).

Developing and implementing e-learning is not only about the design of software – the writing of computer code – but also about the production of roles and identities of various actors. Configuring the 'student as user' therefore requires designers to engage with all aspects of the university, what is sometimes called 'system building' or 'heterogeneous engineering' (cf. Law, 1994). This will in some respects build on research from within the STS. For example Akrich's (1992, 1995) work describes a variety of explicit and implicit techniques employed by designers to construct users. That is, assumptions about a user's competence, needs and interests are built or scripted into a technology, thus determining its shape. Another example for the configuring-the-user-approach is Mort's analysis of tele-medicine, where patients are rendered increasingly passive and are configured as "absent patients" (Mort et al, 2003). Although a user could ultimately reshape or 'work around' (cf. Pollock, submitted) such scripts, this is unlikely owing to further processes where the user is configured (Woolgar, 1991) or taught what to want or expect (through marketing, usability trials, packaging and so on) from a technology.

While the literature within the STS and SSK has been extremely helpful in contributing to our knowledge of the many different processes that allow a technology to 'come to life', this has often been at the expense of our knowledge of the user; the user is only ever seen through the 'eyes of the designer' (McLaughlin et al, 1999). Therefore, we do not rely on such a narrow definition to understand the way in which staff and students become users of e-learning-scenarios. It is important to note that users are always more complex than the models envisaged by the designers of systems. To understand the way they interrelate with such systems requires an understanding of the domains which such

users inhabit or indeed how they have 'multiple memberships' of many different domains all at once (Star, 1991). Moreover, because of this multiple memberships among the users it is assumed that certain identities 'cross-over' (Law, 1994) to serve as resources in the successful take-up (or otherwise) of the technology. This sensitises us to the questions of the organisational shaping of e-learning-scenarios and the social configuration of their users: the semi-virtual student.

4 Co-constructing the Virtual University and configuring its user

University students are, potentially, one of the most interesting groups of users. Are we, for instance, to assume – as possibly designers do – that one undergraduate student on a sociology degree has the same generic competencies, needs and interests as, say, a post graduate MBA student? This poses interesting problems for the developers of systems: How are they to conceptualise the student as a user? How will they attempt to make their conceptualisations 'fit'? Are students, with their already highly changing and ambiguous role and identity (cf. Silver & Silver, 1997) to be configured or taught to be 'successful users'?

What is the underlying evolution in the notion of the semi-virtual student? The socio-technical negotiations within the e-learning development transcend various and sometimes contradictory notions of "the" semi-virtual student as the user: the student who tries to arrange his or her studies between work and family; the student who is a (business) traveller; the student who prefers or is forced to stay at home, the student who needs to be better prepared for occupational work, the student who wishes to make university more compatible and convenient with spare time, the student who needs access from an "outside" system or different parts of the university, the student who loves to be on the campus, the student who wants to be supported from experts *as* an expert. The notion of the mobile student contains a whole variety of options.

Let us now look how the current notion of the (mobile) student today is inscribed in the existing forms of e-learning. One of the few – if not the only – empirical studies which related in detail this theoretical approach of the co-production of technology to research on VUs is the study "Students and Users in the Construction of the Virtual University" by Andrea Buchholz (Buchholz, 2001, Buchholz & Schwarz, 2002).

Exemplifying the development of a Study Guide System (SGS) within a VU, multiple co-existing student constructions are illustrated. A wide range of strategies were discovered how designers, lecturers and researchers constructed "the student as user". Some of those strategies are: shifting between an instrumental, market-driven discourse about university and the principled, values-oriented discourse. Another strategy is switching between ambiguous aspects of the student as an emancipated "*being*" on the one hand and perceiving them as uncivilized, in the making, and "*becoming*" on the other. In contrast to this co-

existing and interplaying notions of the student, the study shows how the main concern of the SGS, namely to put the student into the centre of the VU, has faded. Although designers differ in their picture of the semi-virtual user they underestimate the multiplicity of students' different situations.

Although the SGS project featured modes of control as well as spaces for adaptation (cf. Williams et al, 2000), students got *fixed* as the "student-as-a-course-chooser". In a second phase students became even more *marginalized*: Absorbed by problems in the team and institutional conflicts designers had little concern for students. Finally the lack of interest on students came to light by students' limited access (e.g. students got the fewest access to a database for course material). They became prominent again when a milestone was to be met later in the project. Students got *"reinserted" as phantoms*. But how? The designers had had an inner row which divided them into two groups: one built up a system which constructed the "student-as-information-seeker" and the other group developed the notion of the "student-as-skill-seeker": "The student configured in the SGS can now be understood as reflecting a particular history of the inner working of a project team. (…) Calling these student constructions 'phantoms' highlights that they tend to be an imprint of the [VU designers'] world more than the actual reference to students" (Buchholz & Schwarz 2002: 7).

Reflecting the messiness of designers' work the study suggests to reflect the construction of the student as a user: *First of all* we should be aware that the picture of the semi-virtual student as a user is a product of negotiations and power struggle rather than a given character. *Secondly* only the reflective deconstruction of the student as a phantom, i.e. looking at different and unexpected ways of using technical artefacts, can help to put the student in the centre of the (virtual) university (Buchholz, 2000). "Using, however defined, is practised through a diverse array of socially and historically situated activities" (Buchholz, 2001: 202). *Thirdly* both views, the view of the designer and the student have to made relevant and brought to each other which is not an easy task. Well-balanced studies would require a more in-depth methodology and collaborative ethnology seems to be a promising starting point. But more than in the current "configuration of the user"-approach (Woolgar, 1991) the focus has to be shifted even more to the user than to designers' views – although "we can not pretend to play different roles in a single setting easily" (Buchholz 2001: 204). Rather we need to deal with and engage in roles that we in turn are ascribed to: as designers, lecturers, or researchers. We all leave imprints as intermediaries in ambivalent roles, too.

"A consequence for work done in STS is thus to treat the term 'user' with more caution. We need to possibly find a new and richer vocabulary in which the situatedness of userness would get more strongly preserved. To readily take on board the notion of 'the user' might disguise the setting's own diverse constructions (i.e. as learners, students, advice-seekers, success-indicators). As has become apparent (…) 'the student' and its authentic imprint is not the starting point, but the outcome of a rather complex set of negotiations between intermediaries an their own particular agendas" (Buchholz, 2001: 203).

5 Bridging the designer-user-gap: dealing with plurality

As we have shown, there are competing notions of what a student is and what he or she should be in future. "The purchaser model tends to evade the constructive, participative role of the student as outsider, in favour of a separation between the provider and the recipient. If the student buys rights as a result of the purchase, however, the central right is that of becoming a member, a participant – a member with greater need and power to contribute than the apprentice in the guild or the weekend user of the golf course" (Silver/Silver, 1997: 168).

Whether students can contribute to this changing of roles is an open question. And so is the question of future virtual university-projects, because they depend centrally on how the student is conceived in e-learning-artefacts.

However, interestingly, students remain absent from the design process – they are with few exceptions 'phantom users'. It would be simple to argue for more inclusion of students in the design process but this is not the point of our paper. Beside our plea for a more reflective approach to the political content of technology we rather argue to respond to the multiple and contradictory constructions of the student in two ways. *Firstly* a further concretisation of the virtual university is needed in the sense that the university as an institution must clarify its social relations, its roles and responsibilities towards students (as well as staff and designers). *Secondly* as long as designers, lecturers and policy makers remain unaware of the described co-production of technology in the designer-user-gap they will keep phantomising students – no matter whether they are constructed as members or customers. We have to be careful with and responsible for the multiplicity and contradictions of students and their constructions through intermediaries. Bridging the user-designer-gap as an (ethnographic) intermediary means entering a space for manoeuvre. Where social relations are built into technology, organizations can be shaped, too. Maybe this niche for social change which is hidden in the virtual promise is often overlooked?

For all this noise about free competition of (virtual) universities competition without diversity will not make sense – nor will it be much fun.

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